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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

CHEN, TE Y

ART UNIT PAPER NUMBER

2161

DATE MAILED: 09/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/056,716

Applicant(s)

CHANDRASEKARAN ET AL.

Examiner

Susan Y. Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07/05/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-20 and 22-30 is/are pending in the application.
- 4a) Of the above claim(s) 8-15 and 23-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 16-20, 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/10/2004, 10/18/2004, 1/5/05, 3/10/05, 7/5/05, 7/24/04, 8/18/05
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Response to Amendment

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 07/05/2005 has been entered.

Claims 1-5, 7, 16-20 and 22, have been elected for continuing examination, claims 8-15 and 23-30 are withdrawn for consideration; claims 1, 3, 16 and 18 have been amended; claims 6 and 21 have been canceled. Applicant is reminded to cancel all non-elected claims.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5, 7, 16-20 and 22, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claims 1 and 16, the use of phrases "may be" and "can" raise questions of whether the claimed limitations actually occurred or not.

As to claims 2-5, 7, 17-20 and 22, these claims have the same defects as their respective base claims, hence are rejected for the same reason.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5 and 16-20 are rejected as best as the examiner is able to ascertain under 35 U.S.C. 102(b) as being anticipated by Devarakonda et al. (U.S. Patent No. 5,454,108).

As to claim 1, Devarakonda et al. (hereinafter referred as Devarakonda) discloses a method of handling lock contention [e.g., Abstract; Fig(s). 1, 2-3, 9-10 and associated texts], comprising:

1) a first requester transmitting to a lock management system a first request for a particular lock on a resource [e.g., col. 2, lines 39-46], wherein, the lock management

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system manages locks on resources that will be granted to a plurality of process request for accessing the resources [e.g., col. 3, lines 8-20, col. 4, lines 3-13, lines 27-32, and col. 5, lines 28 – col. 7, lines 6; Fig(s). 2-3, 7-8, 9-10 and associated texts];

2) receiving a message from said lock management system that indicates the first request for a particular lock on a resource is denied [e.g., “the Not OK message and a list of the local lock managers with conflicting tokens”, col. 4, lines 14-32]; wherein a blocking condition caused the denial of the first request and the message includes first data that identifies another resource, wherein the lock management system will not grant another lock for the said another resource while blocking condition is in effect [Note: the claimed features after the “wherein” phrase are defaults of a lock management system]; and

3) base on the first data, the first requester obtaining notification of when the locking condition should no longer cause denial of a request, wherein obtaining notification includes transmitting a request for a lock for said another resource [e.g., col. 4, lines 55-59 and col. 5, line 50 – col. 6, line 14, the Dashed Box processing, Fig. 7; Fig.(s) 2-3, 7-8, 9-10 and associated texts].

As to claim 2, except all the features recited in claim 1, Devarakonda further discloses no process of the plurality of processes holds a lock issued by the lock management system for the resource [e.g., col. 2, lines 44-46].

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As to claims 3-5, except all the features recited in claim 1, Devarakonda further discloses the first requester receiving a notification and in response to obtaining the notification the first requester transmitting another request to the block managements system for a particular lock on the resource via the blocking condition and a second data [e.g., col. 3, lines 53 – col. 4, lines 3, Fig. 7, and associated texts].

As to claims 16-20, these claims recited the same limitations as claims 1-5 in form of computer-readable medium, hence are rejected for the same reason.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Devarakonda et al. (U.S. Patent No. 5,454,108) as applied to claims 1 and 16 above, and further in view of Hart (U.S. Patent No. 5,285,528).

As to claim 7, Devarakonda further discloses the claimed limitation that the first requester is a process of the plurality of processes [e.g., the LLM 114(1) –114(3), Fig. 1].

Devarakonda fails to teach : 1) the resource is a data block indexed by a b-tree;

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2) the second process of the plurality of processes is performing a block split operation on the data block.

However, Hart discloses a lock management system comprising: 1) resources as data blocks indexed by a b-tree [e.g., Abstract, col. 6, lines 46-51; Fig. 2 and associated texts];

2) the second process of the plurality of processes is performing a block split operation on the data block [e.g., Fig. 3 and associated texts].

Therefore, with the teachings of Devarakonda and Hart in front of him/her, it would have been obvious for an ordinary skilled artisan at the time the invention was made to be motivated to modify Devarakonda's system with Hart's teachings, because by doing so, the combined system would be resolve the problems of overlapping requests via the dynamically decomposing requests into non-overlapping data segments which are then granted automatically such that a more fast searching for potential deadlocks is accomplished via the binary tree structure [see, Hart: Abstract, lines 14-20].

As to claim 22, this claim recited the same limitations as claim 7 in form of computer-readable medium, hence is rejected for the same reason.

Response to Arguments

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Applicant's arguments filed on 03/23/2005 have been fully considered but they are not persuasive.

The examiner disagrees with applicant's arguments and piecemeal interpretation for the prior art (i.e., U.S. Patent NO. 5,454,108" issued to Devarakonda) base on newly amended features. In reply to these arguments, the examiner counters by pointing out that the features of claims 1 and 16 are clearly disclosed by Devarakonda, for example, at col. 4, lines 5-59, Devarakonda recites the following:

"When a lock request is received by the LLM, the token granularity determination block 910 determines whether a token covering the entire file or only a portion of the file should be acquired. The determination block 910 signals the LCS request generator 906 accordingly and the LCS request generator generates 906 the request message accordingly. The particular method used by the lock granularity determination block is illustrated in FIG. 2."

"The lock state comparator 908 receives lock requests from processes executing on the node. When a lock request is received the lock state comparator scans the lock state table 904 to determine if there is an entry for the requested file and if the requested lock state is compatible with the present lock state. If there is an entry and the lock states are compatible, the lock state comparator 908 signals the state table update block 910, which updates the locks state table accordingly. If not, the lock state comparator signals the LCS request generator 906. The LCS request generator 906, based on the signal from the lock request granularity determination block 910, generates the appropriate lock request and sends it to the LCS."

"If there are no conflicting tokens, then the lock control server 112 grants the requested token by responding with an OK message. However, if there are conflicting tokens, then the lock control server 112 responds with a NOT OK message and a list (a "copyset") of the local lock managers with conflicting tokens."

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"The response analysis block 914 receives response messages from the network and analyzes them to determine the appropriate LLM action as illustrated in the flow chart of FIG. 3. If, in response to an ACQUIRE, UPGRADE or CHANGE-TOKEN request, an OK message is received from the LCS, the response analysis block 914 signals the state update table block. The state update table block 912 updates the lock state table and grants the lock. If, in response to an ACQUIRE or UPGRADE request, a NOT OK message is received from the LCS, the response analysis block 914 signals the LLM downgrade/revoke request generator block 916. The LLM downgrade/revoke request generator block 916 sends a revoke/downgrade message to all LLMs in the copyset supplied by the LCS."

"If the response analysis block 914 receives an OK message from another LLM, it checks to see if all the LLMs in the copyset have acknowledged. If so, it signals the LCS request generator block 906. The LCS request generator block 906 sends a change token message to the LCS. The response analysis block 914 does not do anything if all LLMs have not yet acknowledged."

"If the response analysis block 914 receives a downgrade/revoke message, it signals the state table update block 912. The state table update block 912 updates the lock state table 904 accordingly and sends an OK message to the LLM on the network."

"If the response analysis block 914 receives an OK message from another LLM, it checks to see if all the LLMs in the copyset have acknowledged. If so, it signals the LCS request generator block 906. The LCS request generator block 906 sends a change token message to the LCS. The response analysis block 914 does not do anything if all LLMs have not yet acknowledged."

"If the response analysis block 914 receives a downgrade/revoke message, it signals the state table update block 912. The state table update block 912 updates the lock state table 904 accordingly and sends an OK message to the LLM on the network."

Wherein, Devarakonda clearly discloses the responses to denial of a request for a lock on a resource via a "NOT OK" message, in addition, Devarakonda clearly discloses messages that identifies another resource for which a lock is to be obtained,

for example, the "Downgrade/Revoke" and "OK" messages that correspond to the elements of a copyset list of another resources associated with the "NOT OK" message. Furthermore, the claimed lock management processing is also clearly disclosed in Col. 5, lines 28 – col. 7, line 6; the Dashed Box processing, Fig. 7; Fig.(s) 2-3, 7-8 and 9-10 and associated texts. As such, in contrary to applicant's arguments, Devarakonda fully anticipated the recited features as recited in claims 1 and 16.

As to the rest of arguments, applicant merely rehashes issues already addressed on records, hence the office maintains the same type of rejection position.

Conclusion

To expedite the process of examination, the examiner requests that all future correspondences in regard to overcoming prior art rejections or other issues (e.g. 35 U.S.C. 112) set forth by the Examiner prior to the office action, that applicant should provide and link to the most specific page and line numbers of the disclosure where best support is found (see 35 U.S.C. 132).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan Y Chen whose telephone number is 571-272-4016. The examiner can normally be reached on Monday - Friday from 7:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 571-272-4023. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Susan Y Chen
Examiner
Art Unit 2161

September 26, 2005



UYEN LE
PRIMARY EXAMINER